

RENEWABLE ENERGY



*RENEWABLE
ENERGY
PROGRAM*

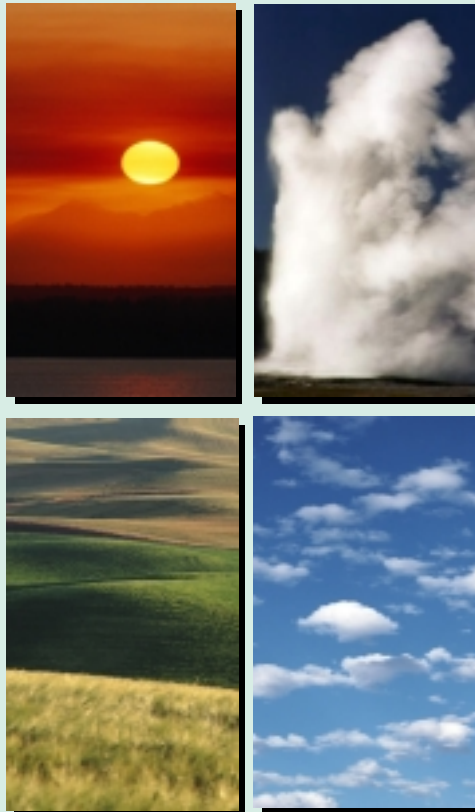
CALIFORNIA ENERGY COMMISSION

Most renewable energy comes either directly or indirectly from the sun. Sunlight, or solar energy, can be used directly for heating and lighting homes, stores and offices, for generating electricity and for heating water to be used in homes or businesses. The heat from the sun also creates the earth's winds, which can be used to generate electricity. Sunlight also causes plants to grow, and the organic matter that makes up those plants is known as biomass. Bioenergy is the retrievable solar energy that is stored in plants and other organic matter. Not all renewable energy comes from the sun. Geothermal energy uses the earth's internal heat to generate electricity and heat buildings, and fuel cells require only hydrogen and air to produce electricity. These renewable energy technologies produce negligible air pollutants and do not contribute to global warming when they generate electricity.

All of these recurring sources of energy are known as renewable energy sources because they appear repeatedly at various intervals or are constant. They are unlike the conventional energy sources known as fossil fuels which include coal, oil and natural gas. These fossil fuels were formed from organic, carbon-based matter over millions of years, and there is only what exists now to supply the needs of the world for future generations. It is estimated that there are enough fossil fuels left to provide the current level of energy use for another 50 years. Fossil fuels are nonrenewable and create dirty air and global warming pollution when they are burned. The world is using fossil fuels that were formed around 65 million years ago at a rate millions of times faster than they were made. Renewable energy technologies, like those mentioned, can provide the electricity the world needs, without the pollution and the danger to people and wildlife that burning and transporting fossil fuels have.

Today, renewable energy resources are used to generate electricity for homes, businesses, schools, factories and any other places where energy is needed. There are several renewable energy technologies available now that are sized for homes and businesses in California. They can be installed in existing structures or incorporated during the construction of new buildings. These technologies include solar photovoltaic panels, solar thermal electric, small wind turbines and fuel cell systems. Additionally, utility-scale electricity in California can now be purchased from several renewable resources. Californians can make that choice when they choose an electric service provider who generates power totally, or in part, from renewable energy sources.

Purchasing renewable energy displaces the generation of power from fossil fuel sources which produce the pollution. These sources of renewable energy are used to create electrical energy that is the same electrical energy the electric utility company has always provided, except that the production of electricity using renewables does not add air pollution to the environment, nor does it deplete the remaining stores of fossil fuels.



Gray Davis, Governor

Mary D. Nichols, Secretary for Resources



CALIFORNIA ENERGY COMMISSION

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For more information, contact the California Energy Commission Call Center at **1-800-555-7794** or visit our Web Site at:
www.energy.ca.gov/renewables